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PREHISTORIC ILLINOIS

CERTAIN INDIAN MOUNDS TECHNICALLY CONSIDERED.

(Dr. J. F. Snyder.)

PART THIRD: TEMPLE OR DOMICILIARY MOUNDS.

The large level-top mounds built by Indians, known to antiquarians as Temple or House mounds, are in this latitude an exceptional class. There are less than fifty of them in the State of Illinois; but in that limited number is included the largest earthwork of the aborigines in the United States. They are not regarded as memorial monuments; nor are they believed to be sepulchers; but whether or not they were primarily projected to entomb the dead is not known, as not one of them has yet been fully explored. In form they are either truncated pyramids, square or oblong—the “teocalli” of the Mexicans—or describe the frustrum of a cone, with circular base. They vary in outline, as well as in dimensions, from low platforms elevated but a few feet above the surrounding surface, to huge structures elaborately terraced and provided with broad ascending roadways.

In the Wabash valley, it is said, are two mounds of this kind, but the report of them is too vague and unreliable to be available in this paper. There is one near Mill creek in the northeastern corner of Alexander county “nearly square and some six or eight feet high” on which is now a dwelling house.* It may, however, not be of the class under consideration, but a buried aggregation of stone graves, as

*Twelfth Annual Report of the U. S. Bureau of Ethnology, p. 149.

were two others in its immediate vicinity. On the Illinois river bottom two miles below Le Grange, in Brown county, is a circular platform mound ninety-eight feet in diameter, originally eight feet in height, having yet the vestige of a graded way leading to its top from the surrounding level plain. It is made of compact clay taken from the bluffs near by, and when first observed, thirty years ago, there was scarcely a perceptible abrasion in its vertical periphery.* Apart from the few truncated mounds above mentioned, it is only in the American bottom, and in one of the upland prairies a short distance farther east, that the true type of temple mounds are found in Illinois. If there are others in the State they are only locally known, and have not been brought into general notice.

For form and magnitude, and for surprising numbers in such a limited area, the well-known group of Indian mounds in the northern end of the American Bottom is the most remarkable of all aboriginal works in the United States. In their explanatory note of the very accurate and reliable map of that wonderful antiquarian district, published in 1906 for private distribution by Dr. Cyrus A. Peterson and Clark McAdams, of St. Louis, they say of the great Cahokia mound, that it is "treble the size of any other similar structure" in this country, and "was originally the central feature of several hundred mounds within a radius of six miles." As sixty-nine mounds are figured on their map within a radius of two miles, their estimate of the probable number once occupying a circle of twelve miles does not seem extravagant.† Brackenridge, who visited that district in 1811, says: "I crossed the Mississippi at St. Louis, and, after passing through the wood which borders the river, about half a mile in width, entered an extensive open plain.

*The Archaeologist, Columbus, O., 1895. Vol. III, p. 77.

†Timothy Flint, writing in 1830, stated the number of mounds on the American Bottom adjacent to Cahokia creek to be two hundred. Quoting this statement of Flint's, Dr. John Mason Peck says, in his *New Guide for Emigrants*, p. 164, that he "has counted all the elevations of surface (there) for the extent of nine miles, and they amount to seventy-two."

In fifteen minutes I found myself in the midst of a group of mounds, mostly of a circular shape, and at a distance, resembling enormous hayricks scattered through a meadow. One of the largest, which I ascended, was about 200 paces in circumference at the bottom, the form nearly square, though it had evidently undergone considerable alteration from the washing of the rains. The top was level, with an area sufficient to contain several hundred men.* * * *

"Around me I counted forty-five mounds, or pyramids, besides a great number of small artificial elevations; these mounds form something more than a semi-circle, about a mile in extent, the open space on the river. Pursuing my walk along the bank of the Cahokia I passed eight others in the distance of three miles before I arrived at the largest assemblage. When I reached the foot of the principal mound, I was struck with a degree of astonishment, not unlike that which is experienced in contemplating the Egyptian pyramids. What a stupendous pile of earth! To heap up such a mass must have required years, and the labors of thousands. * * * * Nearly west there is another of a smaller size, and forty others scattered through the plain. Two are also seen on the bluff, at the distance of three miles. * * * * I everywhere observed a great number of small elevations of earth, to the height of a few feet, at regular distances from each other, and which appeared to observe some order; near them I also observed pieces of flint, and fragments of earthen vessels. I concluded that a very populous town had once existed here, similar to those of Mexico, described by the first conquerors."*

Many of the mounds seen there by Brackenridge in 1811 have long since vanished before the inexorable agencies of civilization; and many of those still there are rapidly yielding to the disintegration of natural causes accelerated by the plow and harrow. In that Cahokia creek district may yet be counted a dozen mounds of the domiciliary type—

*Views of Louisiana, etc. By H. M. Brackenridge, Esq., Pittsburg, 181 pp. 187-188.

square or circular with flat tops—the most noted of which is, of course, the great Cahokia mound, deriving its name from that of the creek near its base that formerly joined the Mississippi at the old village of the same name, six miles below their present junction. On the crest of the bluffs three miles directly east of the great mound there were formerly situated two “sugar loaf” mounds overlooking, on opposite sides, a wide ravine formed by a small rivulet that cut its way at that place through the bluffs in its course from the higher lands beyond. They were signal stations, as is shown by the following report of the thorough examination of one of them, in 1887, by employes of the Bureau of Ethnology; “This was conical in shape and formed a landmark for some distance around. At the depth of about three feet the earth, which was a yellowish clay, became dry and very hard and quite different in character from the loess of the bluff on which the mound stands. At the depth of about twelve feet (farther down) a layer of ashes, nearly an inch thick, was disclosed, and a foot below this another layer of ashes, a foot or more in thickness. Excepting some thin, flat pieces of sandstone there were no relics or other remains, not even a portion of bone.”*

In the early settling of that part of the State there was still plainly seen a well-worn trail, or road, leading from the mound village on the banks of Cahokia creek to the eastern bluffs, and up that ravine between the two lofty signal stations, and on through the timbered hills and across Silver creek, to another square mound in the western edge of Looking Glass prairie, a distance of fifteen miles, known in early pioneer days as the Emerald mound because of its dark green color in the spring and summer seasons, it was a conspicuous and attractive object in plain view for many miles to the northeast and southward. It is situated at the eastern end of a high wavelike swelling of that beautiful prairie, a mile from the (then) timber line, and

*Twelfth Annual Report of U. S. Bureau of Ethnology 1890-91, p. 133

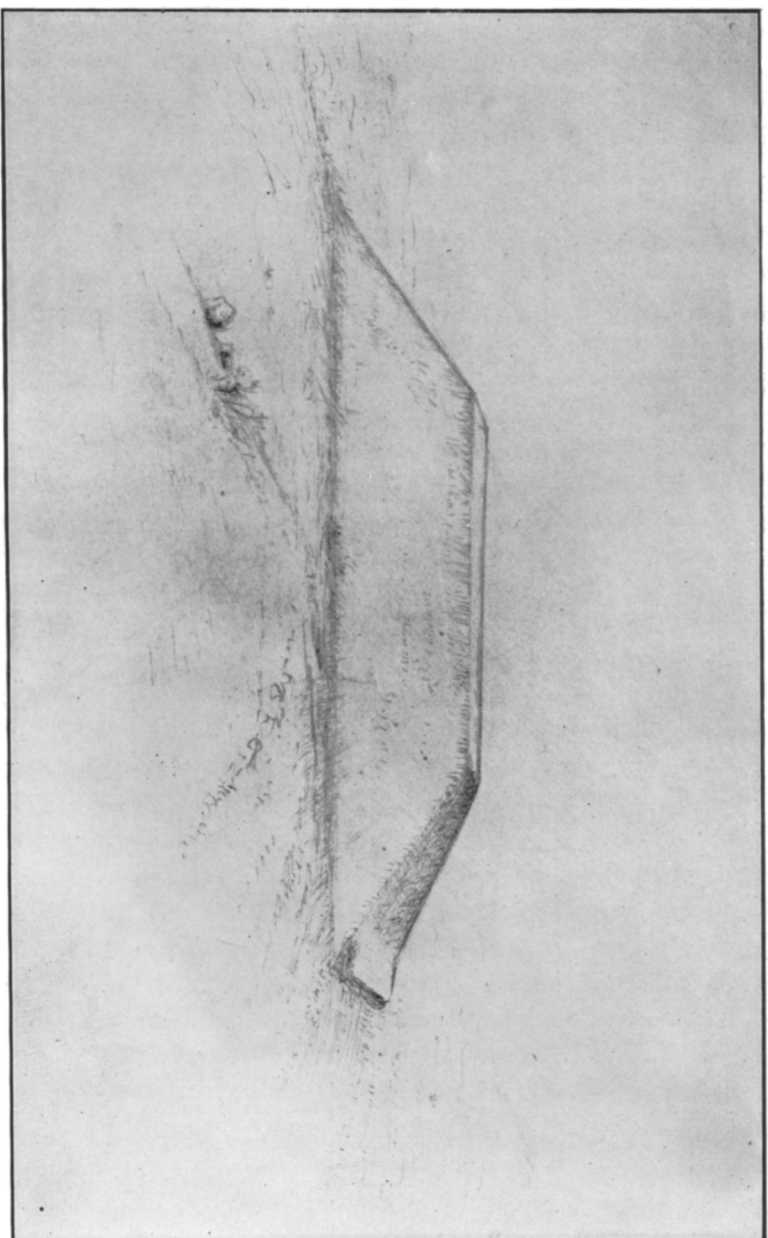


Fig. 1. Emerald Mound in 1820.

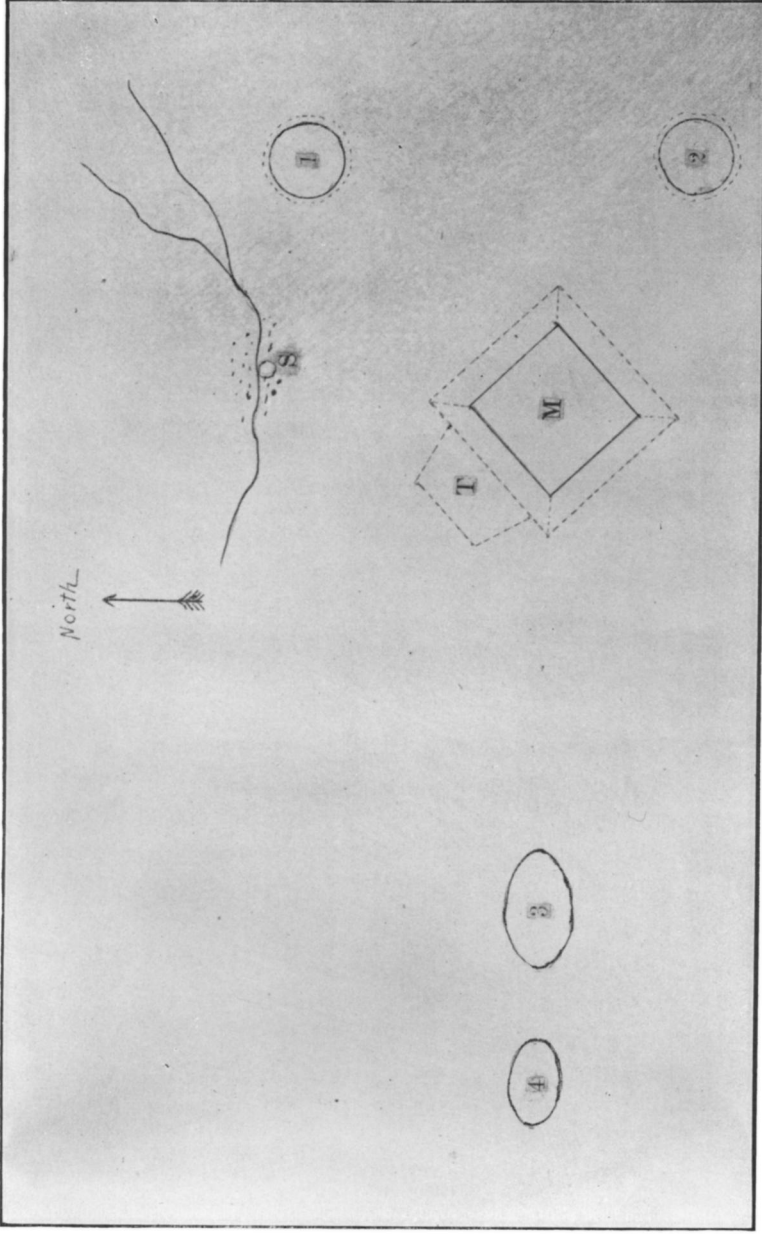


Fig. 2. Diagrams.

two and a half miles northeast of Lebanon—the seat of McKendree college—in St. Clair county. It is the most perfect and best preserved mound of its class in the State; a truncated pyramid in form, approximately true mathematical proportions, each line of its quadrilateral base measuring almost exactly 300 feet, and its level top 150 feet square. Its height is within a few inches of 50 feet, rising from the ground surface on each side with the even grade of a modern railroad embankment. As shown by Fig. 1,* it has survived the passing of centuries with but little abrasion, still retaining to a marked degree the integrity and symmetry of all its outlines and angles, due to the tough clay of which it is made. And of that, it is computed to comprise 56,787 cubic yards; much of it doubtless brought from a distance or scraped up from the subsoil of an extensive area of surrounding country, as no corresponding excavations can be seen in its vicinity. Its corners directed to the four cardinal points of the compass indicate that it was projected with regard to correct orientation, vaguely suggesting worship of the sun by its builders.

Extending a hundred feet from the base of the mound, on its northwestern side, there was originally an artificial terrace 280 feet wide and two or three feet high, marked T on the diagram, Fig. 2, upon which an inclined way 20 feet wide ascended to the top. In all directions from the mound, excepting the west, the ground slopes down as gradually and evenly as a shelving beach of the ocean; on the west it continues with but slight depression to the timber. A hundred yards to the north is a small brook that drains a portion of the prairie, and wends its course westward to Silver creek. Near the bank of that rivulet, beneath the spreading branches of stately old elms and oaks, there gushed from the earth—at S on the diagram—a bold spring

*The drawing of figure 1 was copied from a photograph of the mound, but denuded of the building, fences, trees and other "improvements," accumulated on and around it during the seventy-five years it has adjoined the homestead of a large farm.

of clear, cold water in the days before the era of well-digging and corn-raising. It furnished the water supply of the colony of mound builders whose lodges were pitched all around it on both sides of the branch, as was attested by the numerous hut rings and fire-places, obliterated only after many years of annual plowing.

Directly in front of the northeastern side of the square mound, and 350 feet from its base, there stood a circular mound, 75 feet in diameter at the ground, 12 feet in height, with a level top 30 feet across. East of the east corner of the large square mound, and 300 feet from it, was conical mound No. 2, the exact counterpart of No. 1. Both were carefully constructed of hard, tenacious clay, and described true circles, both at their bases and flat summits. On the broad undulation to the west of these works, and 600 feet distant from the western corner of the truncated pyramid, is mound No. 3, presumably artificial and perhaps sepulchral. It is of the ordinary rounded form, ten feet in height, 150 feet in length and 100 feet wide at the base. West of it a hundred feet is another similar but smaller mound, No. 4, in length 75 feet, by 50 feet in width, and 6 feet high. No exploration of that very interesting assemblage of Indian earthworks has ever been made. In 1840 Mr. Baldwin, then proprietor of the premises, built a dwelling house that encroached several feet upon the large square mound near its eastern corner. In excavating for the cellar and foundations of that building he unearthed, from about a foot beneath the mound's edge, sixteen large flint spades, from ten to eighteen inches in length, smoothly polished at their broad ends by long continued use—evidently tools of the mound builders, secreted there after their work was done. Forty years later a narrow trench, two or more feet deep, was cut into the northeastern side of that mound in which to embed an iron pipe for supplying water to a distributing reservoir placed on its top. Only dense, solid clay was penetrated in digging that trench,

and not an object of human fabrication was discovered in it; but about the center of the square top was found a bed of ashes and charcoal, a few inches below the surface, denoting that, long ago, fire had been maintained there for an indefinite period of time.

There is not another instance in the State of Illinois of an Indian mound approximating this one in dimensions, and certainly not one of its technical form, situated, as this one, on the broad, open prairie. The numbers of ancient lodge rings, with their central fire beds, and the camp refuse and the many fragments of pottery and flint, scattered far and wide around these mounds, as seen there at an early day, prove that locality to have been occupied for a long time by a numerous population identical in characteristics and culture and contemporaneous with the Indians of the American Bottom, who built the great mounds of the Cahokia creek district. Assuming they were the same people, the conclusion is justified that they erected the Emerald mound pyramid, on the most elevated point of their vicinity, with its view of the eastern horizon and the rising sun unobstructed, for a specific purpose connected with their forms of worship and religious rites.

Passing southward from Cahokia creek, where it joins the Mississippi at East St. Louis, on down to the lower extremity of the American Bottom at Chester, Indian mounds are occasionally seen on the alluvial plain, but limited in numbers and far apart. The first American settlers in that region—subject to overflow by the Mississippi—selected, when they conveniently could, those artificial elevations to build their dwellings upon. Reynolds says, in his *Pioneer History*, page 115, that Robert Kidd, one of Colonel George Rogers Clark's soldiers, located on the American Bottom in 1781, and "lived many years on a mound near Fort Chartres." That mound was probably "the eminence near Fort Chartres" from which

Captain Bossu in 1752 witnessed the massacre of a band of Cahokia and Michigami Indians by a foray of Foxes, Kickapoos and Sioux, that came down the Mississippi in 180 bark canoes to wreak vengeance upon that unfortunate remnant of the once powerful Illinois confederacy. In his charming book on *The Far West*, Edmund Flagg, in 1836, says (Vol. II, p. 225): "As I journeyed leisurely," from Columbia to Cahokia * * * * "here and there upon the extended plain stood out in loneliness like a landmark of centuries, one of those mysterious tombs of a departed race. Some of them were to be seen rearing up their summits from the hearts of extensive maize fields; and upon one of larger magnitude stood a white farm house, visible in the distance for miles down the prairie. The number of these ancient mounds upon the American Bottom is estimated at three hundred."

That farm house mentioned by Mr. Flagg, shown in Fig. 3, was made of brick, with only its woodwork painted white. The mound *in* which it was built is the only one of the distinctively temple class now known in the Bottom south of those in the Cahokia creek district. It is in St. Clair county, within less than a mile of the Monroe county line, five miles south of Old Cahokia and three and a half miles southeast of Jefferson Barracks, in Missouri. A truncated pyramid in form, it is 30 feet high, 180 feet square at the base, and each side of its square top measures 80 feet. The ground all around it is level as a floor, with general altitude considerably above the flood line of the Mississippi. Less than a mile to its south was formerly a long, crooked, dismal sheet of water known as Back Lake, now well-nigh drained; and for a distance around that was a very dense forest of large trees, mainly oaks, hickories and pecans. For quite a distance to the north the view up the Bottom was unobstructed except by scattered patches of crab apples, persimmons and hazels. On sandy loamy soil, the well-preserved mound, composed

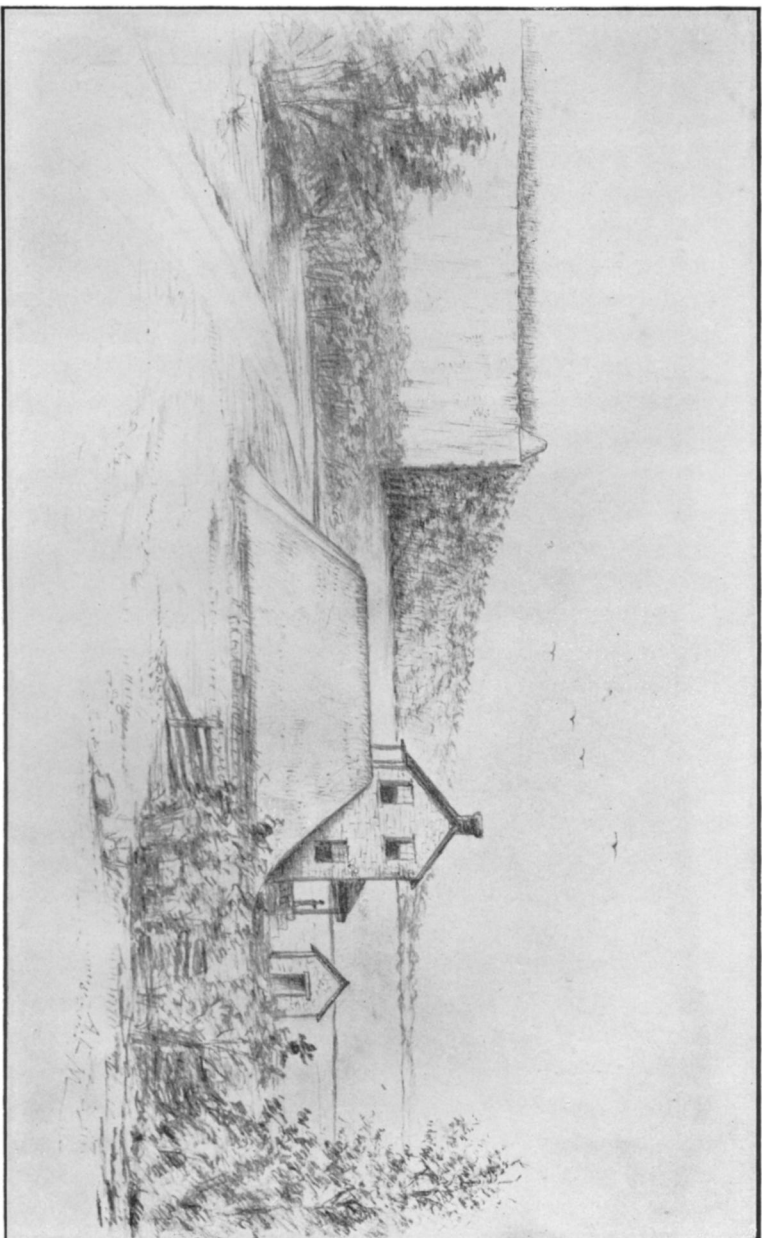


Fig. 3. Square Mound.

altogether of clay, is correctly oriented, each side facing one of the cardinal points of the compass. The house upon and partly in it, built in 1825, is still in fairly sound condition.* When excavating on the south side for the building and cellar, human remains, with primitive artefacts of archaic types, are said to have been discovered, doubtless from intrusive burials of more recent Indians than the builders of the mound.

About six miles east of the ancient village of Cahokia the rounded bald bluffs defining the limits of the American Bottom on that side are suddenly replaced by a perpendicular wall-like escarpment of rock, rising to the average height of 200 feet. A mile and a half farther down is the famous "Falling Spring," where a moderate stream of water, from an opening in the massive strata of carboniferous limestone, leaps eighty feet to the ground below. That lofty mural barrier extends down to a point a mile and a quarter east of the Square mound (Fig. 3), there terminating in a projecting vertical cliff over 200 feet high, to reappear in the same rugged grandeur at Prairie du Rocher. Perched upon the verge of that towering terminal precipice is a noted signal station of the prehistoric Indian, known far and near for more than a century as "The Sugar Loaf." It is a conical mound, thirty feet high, made of clay, tramped so solidly as to have—in its exposed position—successfully defied for ages the destructive forces of the elements. The view presented to the eye from its summit on a clear day is truly magnificent. Below, the American Bottom, for miles around, dotted here and there with groves and farms, lakes and villages, and in the distance the spires and domes of the city of St. Louis and its thriving neighbor, East St. Louis, and of Jefferson Barracks, almost opposite, with glimpses of the Mississippi and its bold, rocky cliffs beyond, make a picture of unsurpassed splendor.

*The house was built, and part of the land around it put in cultivation by Adam W. Snyder, who named the farm "Square Mound," and there the writer of this paper passed the first three years of his life.

From beneath the great ledge of rock surmounted by this signal mound there issues a large spring of pure cold water, which has (or had) the strange peculiarity of regular ebb and flow, as the ocean tides. At a short distance from the spring commences a foot-worn path leading, by a steep, tortuous way, up to the mound above. So conspicuous and familiarly known is that noted landmark that the district in which it is situated was long ago officially named "Sugar Loaf township."

The American Bottom—particularly that part of it north of a line drawn from the mouth of Cahokia creek east to the bluffs—was, and still is, the richest field for archæological research in the State of Illinois, if not in the entire United States. It was for a protracted period the abode of Indians much higher in the scale of barbarism—as judged by their progress in mechanical arts—than the tribes surrounding them; and far in advance of those found there upon discovery of the country. When the white race came into possession of that region, there were in the area specified three groups of ancient earthworks, extraordinary in dimension and numbers, and many of them of forms seldom seen elsewhere north of the Ohio river. The first group, of forty-five, described in 1811 by Brackenridge as placed in a semi-circle of a mile or more in extent, with the open side to the (Mississippi) river, have all totally disappeared and are replaced by the buildings and paved streets of East St. Louis.

"Some twelve miles north of East St. Louis a sluggish creek or slough with high banks, called Long Lake, joins Cahokia creek; and on its banks, near the point of juncture, stands a group of some thirteen or fourteen mounds, circled around a square temple mound of moderate height."* That collection of mounds, the second and smallest of the three groups mentioned, has also, since the above was written, completely vanished; the material of which they

*Paper read by Henry R. Howland before the Buffalo, N. Y., Academy of Science March 2, 1877.

were made and valuable relics they contained having long ago been utilized for grading the road-beds of several railroads passing that point. Only the third and largest group farther east remains intact. Of all those splendid earthworks at East St. Louis and Long Lake, recklessly destroyed and gone, the technical structure and enclosed objects of but three or four were critically observed and reported by persons versed in the lore of American antiquities. Mr. Howland, from whose paper the above quotation is taken, commenting upon the grandeur of this system of aboriginal remains as it appeared thirty years ago, says: "Lines of mounds at irregular intervals serve to connect these groups; and scattered over the entire extent of these rich lowlands are mounds standing alone or in groups of two or three, while occasionally one may be seen surmounting the bluffs, and upon their very verge, two hundred feet above the bottom land. It has been stated that there are two hundred in the series, but from personal observation I am inclined to think that this falls far short of a correct estimate, and that a survey would show that a much larger number may still be plainly traced, for it must be remembered that many of the lesser tumuli have been so altered by the plow that they are not now discernible." Of the central square temple mound at Long Lake, mentioned by Mr. Howland, nothing further is known than his brief statement; not so much as its external measurements have been preserved.

Only one other mound in that cluster was partially examined by competent observers while it was in process of being demolished. In his paper, before quoted, Mr. Howland says: "At the western border of this group, and close to Mitchell Station, stood originally three conical mounds of considerable size, which were first cut into some years since in laying the tracks of the Chicago & Alton Railroad. On the 20th of January, 1876, I visited this group, and found that the largest of these three mounds was being removed to furnish material for building a road

dike across Long Lake, replacing an old bridge. The mound was originally about 27 feet high and measured 127 feet in diameter at the base. * * * * * During the present excavation the workmen found, at a height of four or five feet above the base of the mound, a deposit of human bones from six to eight feet in width and averaging some eight inches in thickness, which stretched across the mound from east to west, as though the remains had been gathered together and buried in a trench. On this level, scattered about within an area of six or eight feet square, were discovered a number of valuable relics, together with a large quantity of matting, in which many of them had been enveloped."

The relics there discovered were chiefly of copper, including a number of small imitation tortoise shells "made of beaten copper, scarcely more than one sixty-fourth of an inch in thickness," remarkably true to nature in form, proportions and external markings. Among them was the front end of a deer's lower jaw, with its incisor teeth intact, finely plated all over with sheet copper as thin as tissue paper. There were also pointed implements of wood and bone, polished discs of bone and other articles, copper plated in the same manner—"the entire workmanship evincing a delicate skill of which we have never before found traces in any discovered remains of the arts of the Mound Builders."* These singularly exquisite products of ancient Indian art were separately enclosed in three envelopes; the first, a fine textile fabric made of bark fibre; the second, woven of rabbit hair; and the third, outer wrapping, a coarse grass and split cane matting. The small number of them Mr. Howland was so fortunate as to secure were perhaps but a fraction of what the entire mound contained, which, with the great mass of human bones they were associated with, were ignominiously shoveled into the slough. What treasures of similar or analogous kind the

*This was written before Prof. Moorehead unearthed the wonderful artistic productions in copper from the Hopewell Mound in Ohio.

other conical mounds of that group may have contained must forever remain a matter of conjecture.

Until a comparatively recent period there was much diversity of opinions regarding the origin of the mounds. Those who believed they were artificial attributed their construction to a semi-civilized race here, antedating—and in every element of culture superior to—the Indians by whom they were displaced, and in some mysterious manner totally exterminated. Others, among whom were the most intelligent and best educated of our early settlers, maintained—and proved to their own satisfaction—that the mounds were products of natural geological forces. Prof. John Russell, the brilliant writer and scholar of Bluffdale, contributed to the March, 1831, number of the *Illinois Magazine* a paper embodying an array of facts and arguments he considered unanswerable, in support of his view that the mounds were merely natural elevations. All around his home, at the foot of the Illinois river bluffs, were mounds of various dimensions, several of which he carefully examined, and was convinced that “they were not the productions of human art.” Dr. John Mason Peck expressed, in his *Gazetteer of Illinois* and his later *New Guide for Emigrants*, the decided opinion “that the mounds of the west are natural formations.” They both pronounced the human bones found in the mounds the remains of recent Indians, whose custom was to bury their dead in elevated places wherever convenient. Prof. A. H. Worthen, State Geologist of Illinois, a man of broad learning and eminent in science, declared that ninety per cent of the mounds were natural formations, and the great Cahokia mound simply an outlier of the glacial drift.

But at present it is positively known that the mounds—with some exceptions—are genuine antiquities, made long ago for special purposes by American Indians. Ninety per cent were primarily built for depositories of the dead and human remains were interred, either originally or

intrusively, in almost all of them. That the earthworks now under consideration—the temple and domiciliary mounds—are correctly classified is well established, not only by ocular proof, but by abundant historical evidence. All mounds having flat, level tops were erected, or adapted by change of other forms, for platforms, or bases, for buildings of some description. Those of that class in Illinois examined before they were defaced or mutilated by the inroads of civilization, exhibited the fire-beds and other unmistakable remains of human habitations, seen in and about similar structures in the southern States through which De Soto passed in 1540-41. The chroniclers of that marvelous expedition give highly interesting, though sometimes conflicting, accounts of Indian villages and village life they saw there; but all agree in their descriptions of the temple or domiciliary mounds then occupied by their builders.

The Inca, La Vega, says: “The natives always endeavored to build upon high ground, or at least to erect the houses of the cacique (chief) upon an eminence. As the country was very level and high places seldom to be found, they constructed artificial mounds of earth, the top of each being capable of containing from ten to twenty houses, Here resided the cacique, his family and attendants. At the foot of this hill was a square, according to the size of the village, around which were the houses of the leaders and most distinguished inhabitants. The rest of the people erected their wigwams as near to the dwelling of their chief as possible. An ascent in a straight line, from fifteen to twenty feet wide, led to the top of the hillock and was flanked on each side by trunks of trees, joined one to another, and thrust deep into the earth; other trunks of trees formed a kind of stairway. All the other sides of the mound were steep and inaccessible.”*

*Book 2, chap. XXVII. Also *Conquest of Florida*. Theodore Irving, M. A. New York, 1851. Pp. 129, 241, 310, 317, 347.

Du Pratz wrote in 1758: "Thus, when the French first arrived in the colony, several nations (still) kept up the eternal fire and observed other religious ceremonies, and many of them still continue to have temples. The sovereign of the Natchez showed me their temple, which is about thirty feet square and stands upon artificial mount about eight feet high, by the side of a river."*

In the account of his journeys through several of the southern States, in 1773-1777, William Bartram makes frequent mention of Indian temple mounds, upon some of which the buildings surmounting them were still standing. In his travels about the source of the Tennessee river he remarks: "On these towering hills appeared the ruins of the famous ancient town of Sticoe. Here was a vast Indian mount or tumulus and great terrace on which stood the council house." Again, at Cowee, he says: "The council or town-house is a large rotunda, capable of accommodating several hundred people. It stands on top of an ancient artificial mount of earth, of about twenty feet perpendicular, and the rotunda on the top of it being about thirty feet more, gives the whole fabric an elevation of about sixty feet from the common surface of the ground." At the ancient town of Apalachucla, he says: "We viewed the mounds or terraces on which formerly stood their town-house or rotunda, and a little back of this on a level height or natural step above the low grounds is a vast artificial terrace or four-square mound now seven or eight feet high." Of Whatoga he further says: "Riding through this large town, the road carried me winding about through their little plantations of corn, beans, etc., up to the council house, which was a very large dome or rotunda, situated on top of an ancient artificial mount, and here my road terminated."†

*History of Louisiana. Le Page Du Pratz. London, 1774. P. 351.

†Travels through North and South Carolina, Georgia, etc. By William Bartram. London, 1792. Pp. 345, 365, 367, 384.

As the flat-top mounds of the American Bottom and vicinity are in every respect similar to those in the southern States seen with houses upon them, as described by the followers of De Soto, by Du Pratz, Herrera, Bartram and others, there is little room to doubt that the purpose of *their* construction was also to serve as elevated platforms or foundations for buildings. The object of this paper, however, is not to enter the tempting field of speculation and discuss the questions, *why* or when or by whom the mounds of the American Bottom were built, but to consider technically *how* they were built. The few in the East St. Louis and Long Lake groups critically examined when demolished, of which we have any record, were undoubtedly wholly artificial and—with one or two exceptions—made of loess or the “bluff formation;” at any rate, not of sand, silt or loam. Inferentially, therefore, those still undisturbed are also wholly artificial and identical in composition. But this is not a demonstrated fact, as there has yet been no systematic investigation of any of them. Much has been written of the central figure of the remaining group, the great Cahokia mound, and yet nothing is positively known of its actual structure.

“When we stand at the base of the great Cahokia mound,” says Prof. Cyrus Thomas, “and study its vast proportions, we can scarcely bring ourselves to believe it was built without some other means of collecting and conveying material than that possessed by the Indians. But what other means could a lost race have had? The Indians had wooden spades, baskets, skins of animals, wooden and clay vessels and textile fabrics; they also had stone implements. Moreover, the fact should be borne in mind that this great mound is unique in respect to size, being more than treble in contents than that of any other true mound in the United States. Nor has it yet been ascertained with satisfactory certainty that it is entirely artificial.”*

*Twelfth Annual Report of U. S. Bureau of Ethnology; p. 631.

Its size has been variously estimated. Brackenridge and Dr. Peck thought it was about ninety feet high. Featherstonhaugh, the English geologist, who saw it in 1834, says, "Its summit is 115 feet from the ground." William McAdams of Alton, having surveyed it, says: "It covers 16 acres, 2 roods and 3 perches of ground, with base 998 long by 721 feet wide, and is 100 feet high." The dimensions given it by Dr. Peterson and Clark McAdams, on their map, are as follows: Length of base, 1080 feet; width, 710 feet; area covered by base, 17 acres; altitude, 104 feet; and cubic contents, 1,500,000 yards. In 1882 a careful survey of the mounds in the Cahokia creek district was made and platted by Dr. John J. R. Patrick, an enthusiastic archaeologist residing at Belleville, six miles east of the American Bottom. In connection with that work he employed C. H. Shannon, then chief engineer of the Wabash Railroad, to specially examine and measure the great mound. By the method of triangulations familiar to civil engineers Mr. Shannon found the greatest height of the mound to be a fraction over 97 feet. Measured with an engineer's chain, and making due allowance for the indistinct line of junction of the mound's lower edge with the common surface of the plain, he ascertained the extreme length of its base to be 1010 feet and its width 710 feet. The area it covers—by his calculation—is 13.85 acres; the rectangular plateau of its summit comprises 1.45 acres and the earthen material of the mound "approximates very closely 1,076,000 cubic yards."

To form an adequate conception of the immensity of this earthwork, by comparison, it may be stated that the most gigantic achievement of aboriginal labor in the United States (next to the Cahokia mound) is Old Fort Ancient, in Warren county, Ohio, whose four miles of huge embankment and included mounds contain—as estimated by Prof. Moorehead—738,000 cubic yards of displaced earth. The basal area, 760 feet square, of the pyramid of Cheops, in

Egypt, one of the "seven wonders of the world," is just 13 acres.

The Cahokia mound, at its base and for the first 37 feet of its height, is a rectangular parallelogram. Fig. 4 is Dr. Patrick's ideal restoration of its appearance when its builders left it. "From the top to the base," says Mr. Shannon's report, "toward the west the slope is quite flat, being about one perpendicular to 3.8 horizontal; while to north, northeast and east the slope is more abrupt, being 1.75 horizontal to one perpendicular. At the south end of the mound is a terrace, 60 feet below the top, having an area of one and three-quarter acres. The slope from this second plateau to the east, west and south is the same as above, viz., 1.75 horizontal to one perpendicular. Supposing the material for its construction to have been procured from the immediate vicinity, and estimating the barren pit was excavated to an average depth of three feet, it would have exhausted the soil to that depth from the surface of a little over 222 acres; while if the barren pit had averaged but two feet deep, it would have extended over 333 acres. * * * * * The weight of a cubic foot of common soil is about 137 pounds. A man can carry 70 pounds, or half a cubic foot, in addition to the weight of the receptacle he carries it in. This is a fair estimate, when the weight now carried by hod-carriers is considered. Assuming the material was carried from a distance of not more than the quarter of a mile, and that the Indian worked 10 hours each day in the year, carrying each day $13\frac{1}{2}$ cubic feet, or half a cubic yard, of earth, he could have completed the job in 5898 years; or 2448 of them, working at that rate, could have done it in two years."

There is little probability, however, that any Indians of the mound-building era worked on the ten-hours-a-day system. Attaching no value to time, their labor was desultory and fitful; persistent for periods, then suspended for long intervals. The moving of all the earth comprised in the Cahokia mound, by their methods, could only have

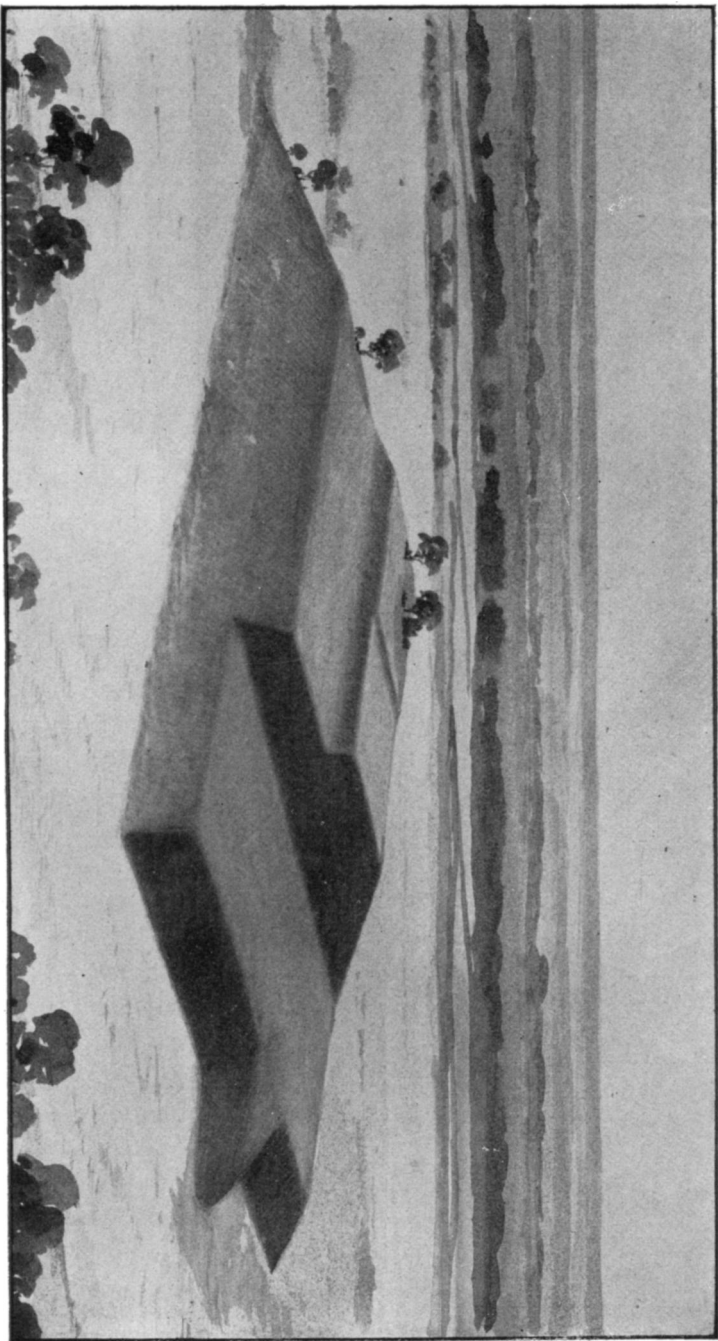


Fig. 4. Cahokia Mound—Restored.

been accomplished by the united efforts of a numerous tribe during a great many years. And was then never completed. The inequalities of level, or offsets, in the upper part of the truncated pyramid evidently mark unfinished stages of construction. For it must undoubtedly have been the architect's design to carry the four lateral slopes up to a plane uniform with that of the present highest plateau. Hence, the inference follows that before that design could be executed the tribe became demoralized and abandoned the work. The arrest of their labors may have resulted from one of two causes. They were, perhaps, overwhelmed and dispersed by an incursion of wild savages; or, owing to the incoming herds of the buffalo, they relapsed from their higher development of semi-sedentary life and agricultural pursuits back into nomadic savagery and subsistence by the chase.*

Until the Cahokia mound is thoroughly and scientifically investigated the problem of its construction will never be determined with certainty. That it is entirely a product of human agency has seldom been doubted; and that belief seems to be confirmed by its regular geometric form; the exact coincidence of its long axis with the north and south points of the compass, and the fact that the mounds around it that have been examined proved to be unquestionably artificial. On the other hand, its extraordinary bulk and the character of the material largely employed in its composition justify the assumption that it may be, in part, a natural elevation modified in shape by the Indians—a parallel instance to that of the celebrated Selsertown mound of Adams county, Mississippi. Certain elements of probability apparently sustain Professor Worthen's contention that it was originally an "outlier of the bluff formation," left there by the surging torrents that plowed out the American Bottom in pleistocene times.

*Nature and Man in America. N. S. Shaler. New York, 1891. P. 182. *et seq.*

In 1905 the few of us still devoted to the study of American antiquities were startled by a well written description, in an eastern magazine, of an Indian mound of enormous magnitude in Illinois, that we had never before heard of. The author, modestly styling himself an "amateur," named it "The Kaskaskia Mound," and says of it: "One mile to the west of the little town of Damiansville, in Clinton county, is situated the monarch of all mounds—the masterpiece of monumental structures at the hands of the prehistoric race of mound builders. It is, in fact, the largest mound in the world. It excels the great Cahokia mound both in altitude and area, having a height of 105 feet and covering a total of 14 acres of ground. It is conical in shape, its extreme surface resembling a perfect table-land, and is resting serenely in the midst of an ideal fertile prairie. It is undoubtedly the largest structure of ancient times, and quite possibly of our modern era."* It is represented by figure 5. Having passed all the years of my boyhood within twenty-five miles of that marvelous mound, in profound ignorance of its existence, its discovery at that late date was astounding. I sent the publication to Dr. Cyrus A. Peterson of St. Louis, who, as soon as practicable after receiving it, with Dr. W J McGee, Clark McAdams and one or two other scientists, hurried over to Clinton county to inspect the new-found wonder. A brief investigation satisfied them that it is a "natural hill," an outlier of the loess or bluff formation, unchanged by prehistoric aborigines, excepting by building a signal mound upon its summit. Possibly a similar outlier may have formed the nucleus of the Cahokia mound. That suggestion is not entirely visionary. From the foundation of that great tumulus up for two-thirds of its height the earth of which it is made is identical with that of the bluffs, so far as has been ascertained. Several years ago its proprietor, Hon. Thomas T. Ramey, dug a tunnel 90 feet in length in direction of its center, on the north side, about 30 feet above the base. In that exploration a small cube of lead ore

*The Dental Brief. Philadelphia, Sept., 1905. P. 529. *et seq.*

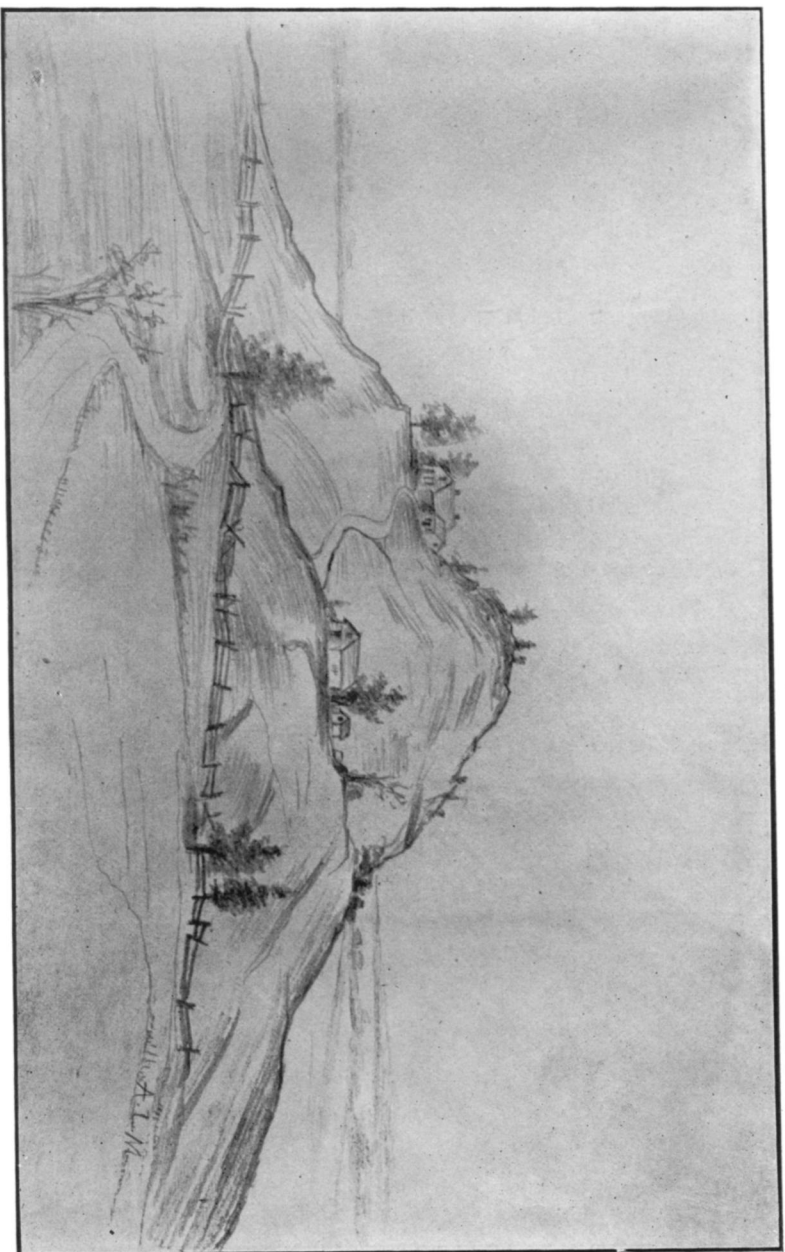


Fig. 5. Kaskaskia Mound.

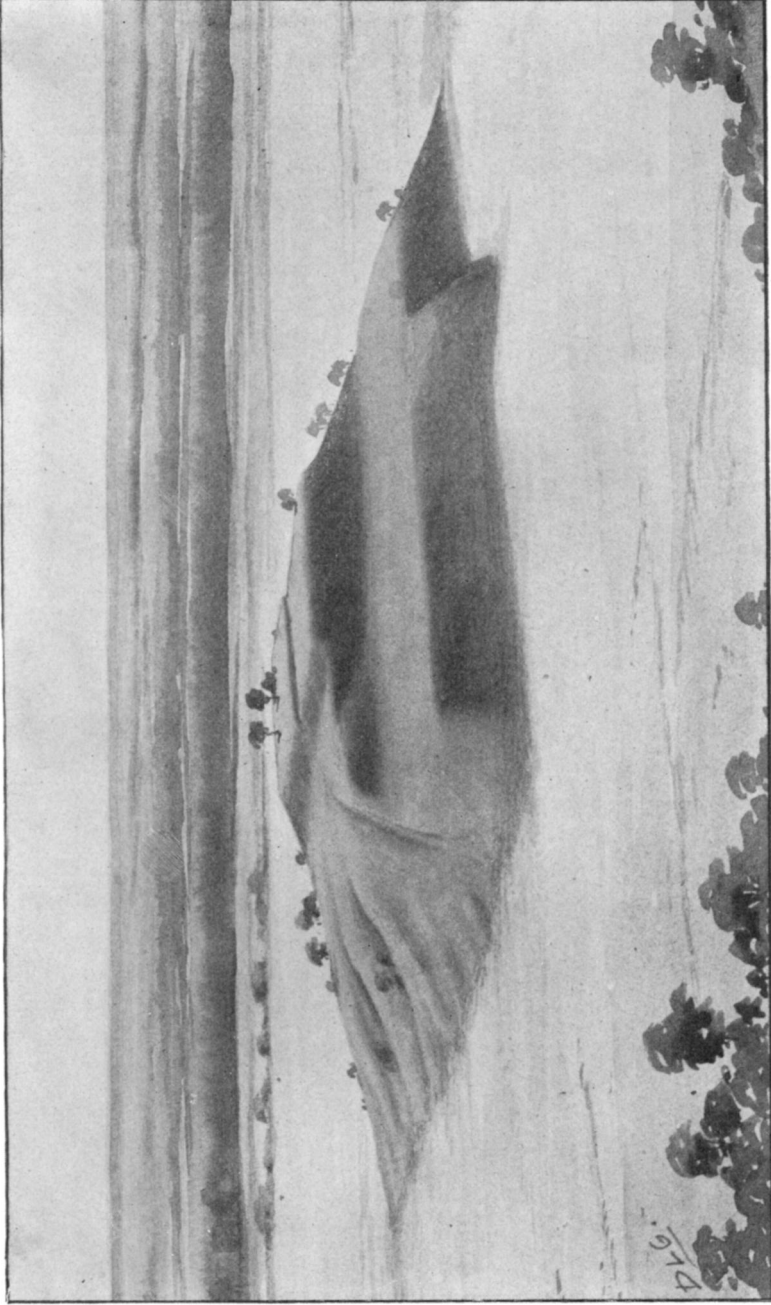


Fig. 6. Cahokia Mound—Present Appearance.

was discovered, but no charcoal or ashes; nor a flint, pot sherd or bone was found to indicate that the solid bluff clay excavated had ever been previously disturbed. But in that clay taken out of the tunnel I afterwards detected and secured several specimens of the small semi-fossil fluviatile shells, often occurring in the drift deposits of the bluffs, namely, *psysa heterostropha*, *limnea humilis*, *helix concava*, *succinea obliqua*, *helix striatella* and others. In the same drift deposits fragments of galena are not uncommon. Close observers of the great mound have noticed that the south terrace and the lower part of the pyramid (made of clay) have retained comparatively well the integrity of their original design; but the upper parts—particularly about the northeastern angle of the summit—are deeply seamed and gashed by action of rain and frost. They have further noticed that the yawning channels of erosion seen there were cut through sandy soil and black silt. From this it is conjectured that the builders, becoming weary of carrying clay from a distance, concluded to complete the mound more speedily with such surface soil, sand or loam they could more conveniently scoop up near by. Fig. 6 is a bird's-eye view of the mound as it appears at present, well displaying the effect of centuries of rains and storms in wearing away and washing down the lighter and less coherent materials of its upper section.

The meager facts I have cited regarding the composition of the Cahokia mound are all that are positively known. It may be but a bluff outlier *in situ*; or every pound of it may have been placed there by human labor and much of it brought by the Indians from the bluffs three miles distant. The definite solution of this problem will be a distinct gain for science. The technical construction of Indian mounds probably appears to many a matter of trivial consideration, but is really an important preliminary step in the systematic investigation of their history, by which there may be learned something of the motives and characteristics of their builders.

Our desultory study of the American Bottom antiquities leads to the conclusion that in the remote past that interesting region was for long periods of time occupied by two different colonies of aborigines, not contemporaneous, but both having migrated there from localities south of the Ohio river. The earlier of the two were the builders of the large mounds—people of semi-sedentary habits, depending in great measure for subsistence upon the products of the soil, particularly the cultivation of corn. For many years, perhaps centuries, they were numerically strong enough to defend themselves from incursions of aggressive enemies and enjoy the peace and quietude necessary for the very considerable advancement they made in the rudiments of civilization. The other—more recent as well as more limited—occupants, who buried their dead in stone lined graves, built only such mounds as served to inclose certain aggregations of their cist burials.

And at this unsystemized beginning of individual inquiry into the aboriginal savage life all knowledge of the builders of temple or domiciliary mounds in Illinois ends. Active research in this embryonic stage of Illinois history should not thus be abandoned. It is the obvious duty of the State to revive and vigorously prosecute it, which can best and most appropriately be done by delegating the work, with ample appropriations, to the Illinois State Historical Society.